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ABSTRACT

Technical and vocational education and training should be considered within the more comprehensive concept of human resources development. To ensure that both the human and the professional aspects of vocational education are addressed, two major dimensions should always guide the design of training and human resource development: education and work. The educational dimension caters to individual needs and human aspects, whereas the work or economic dimension caters to societal needs and labor market requirements. The challenge to vocational education practitioners is to integrate these two dimensions. Three major factors are involved in the economics of vocational education systems: funding; costs, efficiency, and effectiveness; and evaluation and assessment. The social status of vocational education in any society is, to a great extent, a reflection of the status of work values in that society. A rational and balanced approach can be realized if work activities are assessed both by their material and economic returns on the individual and society and by their social and humanizing influences. Although approaches to and systems of vocational education have developed along national lines, vocational education is no longer only a national concern. Globalized economies make the provision of vocational education a worldwide concern, and the integration of the human and market-driven aspects must be assessed in each culture. International agencies in the field of vocational education need to address the issue of the two perspectives of vocational education so that preparation of workers and citizens can be as integrated as possible. (KC)

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The Changing Demands of the 21st Century: Challenges to Technical and Vocational Education

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The Changing Demands of the 21st Century: Challenges to Technical and Vocational Education

A. Introduction

Technical and Vocational Education and Training (TVET), or Vocational Education in brief, should be dealt with, and its issues approached, within the more comprehensive concept of Human Resources Development, a concept that comprises the supply side or sources of human power, as well as the linkages and channels between the supply and demand sides of human power.

The supply side covers, as is well known, such sources as the various levels and fields of formal and non-formal education and training systems, including vocational education. It also covers additions to the labour force from external sources such as immigrant labour. The linkages between the supply and demand sides of human power, on the other hand, which should be considered essential elements of the concept of human resources development, comprise such components as information systems, legislative tools, occupational classifications and standards, employment services, career guidance and councelling services, research and development in the concerned fields, and the relevant institutional setups in the form of councils, boards, committees and administrative units.

Considering its nature, content and methodology, vocational education is strongly rooted in educational ideals and objectives, on the one hand, and is thoroughly permeated by labour market criteria and work standards, on the other. To ensure both the human and professional aspects of vocational education, two major dimensions should always guide the design of the relevant schemes and systems: EDUCATION and WORK. The educational dimension caters more for the individual needs and human aspects, while the work or economic dimension caters more for societal needs and labour market requirements. Furthermore, modern approaches take it for granted that vocational education schemes and programmes cannot be designed to correspond accurately to a particular job. The dynamics and changing demand of the labour market require more and more the replacement of physical skills by mental skills, and hence that such schemes and programmes be liberalized and broad-based, to promote adaptability, widen the scope of job opportunities, and enhance educational and occupational mobility. One of the major challenges that is still encountered by policy makers and planners of vocational education systems, in developing as well as developed countries, is the ability to operationalize the concept of integration, rather than just that of coordination and coexistence, of educational and work values and standards, and hence the integration of

individual and societal needs, interests and objectives. The schism or separation between the education system and the world of work, which is found in particular in most developing countries, is one of the major weaknesses of vocational education systems in these countries.

In many countries, especially industrialized ones, the centre of gravity of vocational education systems is generally located nearer to societal and labour market needs, at the expense of educational values and individual needs. In many other countries, especially developing ones, the centre of gravity is located nearer to educational criteria and standards, at the expense of labour market needs and employment requirements.

In my address, three main vocational education issues will be explored, that are of special importance in general, and in developing countries in particular. These issues are: The economics of vocational education, the social status of vocational education, and the regional and international dimensions of vocational education.

B. The Economics of Vocational Education

Three major factors have to be explored when the economics of vocational education systems are discussed. The first factor is concerned with the sources of finance and methods of funding; while the second factor is concerned with such matters as costs, efficiency and effectiveness, and hence with the socioeconomic return on investment in vocational education. The third factor caters for the evaluation and assessment of the relevant systems and programmes.

The sources of finance and methods of funding of vocational education programmes vary considerably. Nevertheless, two such sources predominate: the first represents the taxpayers through central and/or local budgets, while the second source represents employers in industry and business, who are the main beneficiaries of the output of vocational education systems. Other sources with less impact include learners and trainees themselves and their families, in the case of fee-paying programmes; income generating activities; and grants and donations, especially for such programmes as those directed to special groups, including the handicapped and the underprivileged. In most developing countries, public sources of finance for vocational education usually predominate. Public funding is in general utilized to finance school systems, and suffers usually from being inadequate, especially in countries with limited resources, where vocational education is not considered a priority in national budgets. A dynamic multi-faceted approach to the

funding issue, with the objective of diversifying sources of finance, should be adopted in developing countries to ensure adequacy and sustainability of funding. Such an approach has yet to gain recognition and feasibility in such countries.

Matters related to cost, efficiency and effectiveness of vocational education schemes, which represent the second factor concerning the economics of such schemes, pose a big challenge in most developing countries. The relevant issues here include, on the planning or macro level, system choice or the school vs. the enterprise issue, the broad vs. the narrow base approach to the area of specialization, and the duration of the vocational education programme. On the operational or micro level, such issues include trainee-instructor ratios, utilization factors of training facilities, choice of equipment and technologies, and size and nature of productive activities.

Evaluation systems and techniques, which represent the third factor concerning the economics of vocational education, are far from being common practice in developing countries. To be effective, evaluation systems should incorporate three main elements. The first is internal evaluation, which is mainly concerned with assessing the degree of compatibility between the outputs of the vocational education programme and the performance objectives specified for such programmes. The second element is the economic evaluation, which is basically concerned with such indicators as cost-benefit criteria, changes in learner's income, changes in productivity at the work place, comparative costing of different vocational education systems, and optimum utilization of training facilities and services. The third element is external evaluation, which is generally concerned with assessing the degree of compatability between the outputs of the vocational education programmes on the one hand, and labour market needs and employment requirements, on the other.

In developing countries, all aspects related to the economics of vocational education are sources of concern, and even frustration, especially when taking into consideration the relatively high cost of vocational education programmes, compared with other educational offerings.

III. Social Status of Vocational Education

The social status of vocational education in any society is, to a great extent, a reflection of the status of work values in that society. Traditional cultures and philosophies range between two extremes regarding their assessment of work values. At one extreme, the ancient Greek culture viewed work as a low-grade life activity that, nevertheless, can't be dispensed with; while at

the other extreme, the Marxist culture viewed work as the supreme value. Between these two extremes, different cultures vary to some extent in their assessment of work values. A rational and balanced approach can be realized if work activities are assessed both by their material and economic returns on the individual and society, on the one hand; and their social and humanizing influences, on the other. Thus, vocational education systems and schemes should be designed as developmental life experiences that have their own social dimension and cultural extension. Vocational education, should do more than provide the learner with the specific skills and knowledge needed for the job. It should be acknowledged that occupations are more effectively performed by workers who are generally, as well as specifically prepared, taking into consideration the ongoing transformation of work processes, technologies and environments.

The social status of vocational education can, on the other hand, be enhanced in practice through appropriate career guidance and councelling services, as well as employment and placement services. Unfortunately, these two types of services are weak in most developing countries, accentuating more the status issues of vocational education. When such services exist, fully or partially, in developing or developed countries, it is not unusual for the providers of such services to fall in the trap of being guided more by labour market needs and employment priorities, than by the fulfillment of the individual's needs and inclinations, and the realization of his potentialities. Proper career guidance and employment services should fulfil both labour market and individual needs, and should not end up by adjusting or even distorting the learner's inclinations to labour market requirements.

In practice, the social status of vocational education is also influenced, to a great extent, by the type of relation and nature of channels that link it with higher education that leads to the preparation of professionals. Successful vocational education schemes are usually designed with inherent and built-in links with higher educational and occupational levels, through the formal or non-formal systems of education, within the general concept of continuing and life-long education. In some education systems, especially those of developing countries, the realization of this concept would necessitate the restructuring and reform of higher education, in order to eliminate bottlenecks, and establish lateral and vertical channels among the various fields and levels of educational and training offerings, to promote occupational and educational mobility and, consequently social mobility. In general, therefore, higher education should be linked with the abilities and performance standards of the learner, irrespective of the type or stream of pre-university education or training he experienced.

Furthermore, the status of vocational education can be enhanced in practice through the establishment of a comprehensive and diversified network of non-formal and adult educational and training facilities and services which are accessible to the employed, as well as to the unemployed, to enable them move along and up the educational and professional ladder at any point or stage of their careers; thus fostering their personal development, enhancing their occupational and social mobility, and upgrading the quality and productivity of work sites. In most developing countries, such facilities and services suffer from two main shortcomings: First, they fall short of the minimum requirements needed to have an impact in such aspects as quantity, quality, geographical coverage, flexibility and accessibility. Secondly, such facilities and services seem to be utilized more by those who are already better educated and who can afford the costs involved. Thus, instead of acting as a means to compensate for earlier inequalities in educational and training opportunities, and as a vehicle to contribute to bridging the social and economic gap between the various groups of society, adult education facilities and services face the risk, in most developing countries, of widening the educational, occupational and social gap between the privileged and the underprivileged, between the haves and the have-nots.

Other aspects of the status issue of vocational education include such factors as the status of the vocational teacher, the gender issue, and the vocationalization of general education. It is not unusual in many education and training systems to find that vocational teachers are not of equal status, socially and economically, to their general education counterparts. It is also not unusual to find that the relevant vocational education facilities and services are structured basically around the needs of male learners, with the result that the role of females as learners, instructors, planners and providers of services, lags considerably behind the role of males. Finally, a great service can be offered to the status issue, if a strong element of vocational education, or -more specifically- prevocational education, is incorporated as part of general education in the form diversified practical activities and life experiences, derived from the various socioeconomic sectors.

IV. The Regional and International Dimensions of Vocational Education

The approach to issues related to human resources development in general, and vocational education in particular, is no more a purely national concern. For sometime now, it has been a regional concern; and now it is even becoming a concern with international dimensions that should take into consideration emerging conditions of increasingly globalized economies of the world, manifested by the changing structure and framework of world

trade, labour mobility, common markets, commodity standards, multinationals, and the geographical characteristics of industrialization. The economies of developed Western Countries, as an example, are shifting away from the manufacturing sector to the services sector, with much of the manufacturing activities moving to less developed countries in Asia and Latin America, attracted by reduced production costs.

It is thus becoming increasingly essential to think regionally and even globally when planning, defining policies and designing programmes at the national level, for the quantitiave and qualitative aspects of vocational education as a component of human resources development, especially in such matters as job classification, skill standards, educational levels, informations systems and the identification of training needs.

We talk freely of the regional and international dimensions of vocational education at the macro level, but we seam to be timid and shy in the face of some of the issues at the micro level. Take for example the two concepts of vocational education and vocational training.

We frequently come across, or use, these two terms, sometimes to mean different things and sometimes to mean the same thing. The split and schism between Vocational Education and Vocational Training is believed to be artificial in modern vocational schemes and programmes. The fact that the split still exists is due probably to past prejudices and administrative structures. So, nothing short of the full integration of the implications and contents of the two terms is acceptable now.

The split might have been justified decades ago when it was usual for workers to acquire the skills needed for their jobs purely through traditional time-serving informal apprenticeship schemes, consisting predominantly of on-the-job practical experiences. This is no more the case now. Jobs are classified according to two main variables: the field of specialization and the occupational level. The content of any vocational preparation programme for a job is analysed into its constituent functions, duties and skills, specifying the theoretical content and knowledge needed. Thus the needs and requirements of the job dictate the structure and content of the vocational programme, whether it is called vocational education or vocational training. The fact that the vocational programme is implemented in an educational institution or within a work environment in an enterprise should not affect the basic structure and content of the programme, simply because the needs and requirements of the job are independent of the venue that is utilized for the implementation of the preparation programme. The schism between Vocational Education and Vocational Training can be

ended, and the barriers demolished if vocational programmes are structured around the needs of the job and the needs of the learner, irrespective of the venue of implementation, or the agency responsible for its financing or administration.

The two most renowned international agencies in the field of vocational education and training, UNESCO and ILO, need to address this issue seriously, so that we stop talking different things about what should be the same thing, and stop insisting that UNESCO's role is vocational education, while ILO's role is vocational training. This is not role splitting, but rather hair splitting!

It is worthwhile mentioning here in this context that, because UNESCO and ILO communicate with member countries through different channels and national agencies, two systems of humanpower preparation at the basic occupational levels emerge sometimes side by side with little or no coordination, and sometimes with rivalry and mistrust.

To conclude, the regional and global dimensions of vocational education cannot be properly explored without investigating their cultural reflections and outreaches, especially that globalization is a trend that is permeating all aspects of life: economic, social and cultural. This would obviously present another challenge to planners of vocational education systems, and would justify more the broad-base human approach to vocational education programmes to complement the professional and specialized approach.

What is really needed in our education systems is, more and more, the liberalization of vocational education and the vocationalization of general education.